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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,352	01/22/2002	Srinivas Gutta	US020030	9283

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
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BRIARCLIFF MANOR, NY 10510

EXAMINER

HIRL, JOSEPH P

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 04/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application N .

10/055,352

Applicant(s)

GUTTA ET AL.

Examiner

Joseph P. Hirl

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1-14 are pending in this application.

2. The claims and only the claims form the metes and bounds of the invention.

"Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, I 45-48; p 2100-9, c 1, I 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

3. Examiner's Opinion:

Para 2 above applies. Examiner has full latitude to interpret each claim in the broadest reasonable sense.

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The language of the claims raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. Further, claims 3 and 4 relate to claim 2 and similarly claims 10 and 11 relate to claim 9 wherein in both instances, the senior dependent claim has a random or pseudorandom function. For claims 2 and 9, where such is the case, the effect on claims 3 and 4, and claims 10 and 11, respectively, will be to prevent such further limitations from being applied. From the specification at page 7, lines 21-22, the inventor acknowledges that a sporadic alteration of the learning rate does not always increase the rate of convergence. Consequently, for the lack of usefulness, concreteness, tangibility to include a lack of tangible implementation in the technical arts, the disclosure is non statutory.

***Claim Rejections - 35 USC § 112***

Art Unit: 2121

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-14 are rejected under 35 USC 112, first paragraph because current case law (and accordingly, the MPEP) require such a rejection if a 101 rejection is given because when Applicant has not in fact disclosed the practical application for the invention, as a matter of law there is no way Applicant could have disclosed how to practice the undisclosed practical application. This is how the MPEP puts it:

("The how to use prong of section 112 **incorporates as a matter of law** the requirement of 35U.S.C. 101 that the specification disclose as a matter of fact a practical utility for the invention.... If the application fails as a matter of fact to satisfy 35 U.S.C. 101, then the application also fails as a matter of law to enable one of ordinary skill in the art to use the invention under 35 U.S.C. § 112."); In re Kirk, '376 F.2d 936, 942, 153 USIPQ 48, 53 (CCPA 1967) ("Necessarily, compliance with § 112 requires a description of how to use presently useful inventions, **otherwise an applicant would anomalously be required to teach how to use a useless invention.**"). See, MPEP 21107.01 (IV), quoting In re Kirk (emphasis added).

8. Therefore, claims 1-14 are rejected on this basis.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 3, 5, 10, and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "may range decreases" is both indefinite and ambiguous reducing claims 3, 5, 10 and 12 to the level of indefiniteness.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Mehrotra (MIT Press, 1997, Artificial Neural Networks, referred to as **Mehrotra**).

**Claim 1.**

Mehrotra anticipates initializing a set of weights of a self-ordering map (**Mehrotra**, p 189, Fig. 5.16); iteratively training said weights over many training epochs (**Mehrotra**, p 189, Fig. 5.16); for at least a number of said epochs, said step of iteratively training including updating said weights based on a learning rate that is generated according to a function that changes in a fashion that is other than monotonical a decreasing value with training epoch (**Mehrotra**, p 192, I 1-3; Examiner's Note (EN): to one of ordinary skill in the art, monotonical decreasing means never remaining constant or increasing; Mehrotra remains constant for certain periods of time).

**Claims 2., 9.**

Mehrotra anticipates step of iteratively training includes updating said weights based on a learning rate that is generated according to a random or pseudorandom function (**M hrotra**, p 192, I 1-3; EN: to one of ordinary skill in the art, random means random with a uniform distribution such as a normal distribution; Mehrotra matches a

Art Unit: 2121

normal distribution wherein the abscissa is the independent variable "t" and the ordinate is  $\eta(t)$ ; the peak of the distribution is set at .5 and remains constant to  $t = 6$ ; unless the variance is tight, the top of the distribution will be close to flat; Mehrotra then steps down to a value of .25 at  $t = 6$  until  $t = 12$  again following the distribution; similarly, Mehrotra then steps down to .1 for  $t > 12$ ; the step values follow the distribution and are therefore representative of a pseudorandom  $\eta(t)$ .

**Claims 3., 5., 10., 12**

Mehrotra anticipates iteratively training includes updating said weights based on a learning rate that is generated according to a function that is such that values over which said learning rate may range decreases with training epoch (**Mehrotra**, p 192, l 1-3).

**Claims 4., 6., 7., 11., 13., 14.**

Mehrotra anticipates iteratively training includes updating said weights based on a learning rate that is generated according to a function that is such that values over which said learning rate tend to decrease with training epoch (**Mehrotra**, p 192, l 1-3).

**Claim 8**

Mehrotra anticipates choosing a random value for initial weight vectors (**Mehrotra**, p 188, l 28); drawing a sample from a set of training sample vectors and applying it to input nodes of said self ordering feature map (**Mehrotra**, p 189, Fig. 5.16); identifying a winning competition node of said self ordering feature map according to a least distance criterion (**Mehrotra**, p 189, Fig. 5.16); adjusting a synaptic weight of at

Art Unit: 2121

least said winning node (Mehrotra, p 189, Fig. 5.16); said step of adjusting including selecting a value for a learning rate used to update said synaptic weight that is based on a function other than one that is monotonic with training epoch (Mehrotra, p 192, l 1-3); iteratively repeating said steps of drawing, identifying, and adjusting (Mehrotra, p 189, Fig. 5.16).

### ***Conclusion***

13. The prior art of record and not relied upon is considered pertinent to applicant's disclosure.

- Kohonen, IEEE 0-7695-0619-4/00
- Kohonen, IEEE, Vol 78, No. 9, September 1990
- Kasravi et al, U.S. Patent 5,933,818
- Ye et al, U.S. Pub 2002/0091489
- Eder, U.S. Pub 2001/0034686
- Barillaud, U.S. Patent 6,578,021
- Ye et al, U.S. Patent 6,477,469
- Caid et al, U.S. Patent 6,173,275
- Matsuoka et al, U.S. Patent 6,018,696
- Peterson et al, U.S. Patent 5,819,245
- Watanabe et al, U.S. Patent 5,479,576



- Austvold et al, U.S. Patent 5,235,673

14. Claims 1-14 are rejected.

***Correspondence Information***

15. Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner, Joseph P. Hirl, whose telephone number is (703) 305-1668. The Examiner can be reached on Monday – Thursday from 6:00 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anil Khatri can be reached at (703) 305-0282.

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,  
Washington, D. C. 20231;

or faxed to:

(703) 746-7239 (for formal communications intended for entry);

or faxed to:

(703) 746-7290 (for informal or draft communications with notation of "Proposed" or "Draft" for the desk of the Examiner).

Hand-delivered responses should be brought to:

Receptionist, Crystal Park II

Application/Control Number: 10/055,352  
Art Unit: 2121

Page 9

2121 Crystal Drive,  
Arlington, Virginia.

A handwritten signature in black ink, appearing to read 'J. Hirl', written over the address text.

Joseph P. Hirl

April 7, 2004